



## NATIONAL SCIENCE FOUNDATION

### Notice of Permit Applications Received Under the Antarctic Conservation Act of 1978

**AGENCY:** National Science Foundation.

**ACTION:** Notice of permit applications received.

**SUMMARY:** The National Science Foundation (NSF) is required to publish a notice of permit applications received to conduct activities regulated under the Antarctic Conservation Act of 1978. NSF has published regulations under the Antarctic Conservation Act in the Code of Federal Regulations. This is the required notice of permit applications received.

**DATES:** Interested parties are invited to submit written data, comments, or views with respect to this permit application by [**Insert 30 days from date of publication in the Federal Register**]. This application may be inspected by interested parties at the Permit Office, address below.

**ADDRESSES:** Comments should be addressed to Permit Office, Office of Polar Programs, National Science Foundation, 2415 Eisenhower Avenue, Alexandria, Virginia 22314.

**FOR FURTHER INFORMATION CONTACT:** Nature McGinn, ACA Permit Officer, at the above address, 703-292-8030, or [ACAperrmits@nsf.gov](mailto:ACAperrmits@nsf.gov).

**SUPPLEMENTARY INFORMATION:** The National Science Foundation, as directed by the Antarctic Conservation Act of 1978 (Public Law 95-541, 45 CFR 671), as amended by the Antarctic Science, Tourism and Conservation Act of 1996, has developed regulations for the establishment of a permit system for various activities in Antarctica and designation of certain animals and certain geographic areas requiring special protection. The regulations establish such a permit system to designate Antarctic Specially Protected Areas.

#### APPLICATION DETAILS:

1. Applicant

Permit Application: 2021-006

Ari S. Friedlaender, Institute for Marine Sciences, UC Santa Cruz, 115 McAllister Way, Santa

Cruz, CA 95003.

Activity for Which Permit is Requested

Waste Management. The applicant would conduct research around the Antarctic Peninsula to determine the ecological role of baleen whales. Sensor tags would be used to collect data on the underwater movement and behavior of the whales. Over time, the applicant would be able to determine how changes in the whales' behavior correspond to changes in sea ice, krill, and other critical aspects of the Antarctic marine ecosystem that are at risk from rapidly changing climates. The applicant would collect skin and blubber biopsy samples to gain a better understanding of the identity, population structure, and health of the whales. The applicant would operate unoccupied/remotely piloted aircraft systems (UAS, RPAS) to collect photographs of individual whales for health assessment purposes. The applicant would collaborate with Antarctic tour operators that would provide platforms to the applicant's research team in order to gather data during time periods that are undersampled. The applicant is seeking a waste permit to cover any accidental releases that may occur if the biopsy darts, tags, and/or remotely piloted aircraft are lost. The research teams would be comprised of experienced researchers and UAS/RPAS pilots. By employing personnel such as this, the applicant would minimize the risk of generating waste and losing any equipment due to human error. The applicant would also conduct activities under conditions (weather, sea state, etc.) allowing the applicant and team to maintain visual contact with instrumentation and equipment as well as aid in retrieval as needed.

Multi-sensor, suction cup tags would be attached to whales. When they are shed, they float and are retrieved using radio telemetry tracking tools. While tag failure is rare, a lost tag would constitute waste in the form of 300 grams of syntactic foam, 100 grams of electronics and 20 grams of silicon suction cups. Biopsy sampling is done with a crossbow firing a floating dart, made of aluminum and carbon fiber, that bounces off the whale's body after extracting a tiny plug of tissue. The biopsy bolt tips are a 40 mm stainless steel barrel and the bolts also contain

a 5x2cm foam float that is used to aid in dart retrieval. The bolts are highly visible and remain at the surface for retrieval. An observer would maintain visual contact with the bolt until retrieval. The successful retrieval rate is very high (only 3 bolts lost in over 500 sampling events). The UAS/RPAS would be operated by experienced pilots according to protocols designed to ensure safe operations and to minimize the risk of loss. The commercial, off-the-shelf aircraft are powered by lithium polymer batteries and do not require any fuels. Loss of aircraft would result in a minor amount of plastic and metal waste from the frame and camera as well as non-toxic (no lead or cadmium) lithium polymer batteries.

*Location*

Antarctic Peninsula region.

*Dates of Permitted Activities*

December 25, 2020 – November 30, 2024.

**Erika N. Davis,**

*Program Specialist,*

*Office of Polar Programs.*

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